REMARKS

In the Office Action, the Examiner rejected claims 6-13, and 21-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,260,183, issued to Raspopovic et al. ("Raspopovic"). The Examiner also rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Raspopovic in view of U.S. Patent 5,875,117, issued to Jones et al. ("Jones"). The Examiner objected to claim 15 as depending from a rejected base claim.

In this Amendment, Applicants have amended claims 6, 8, 9, 13, and 21-22. Accordingly, claims 6-15 and 21-22 will be pending after entry of this Amendment.

I.   Rejection of Claims 6-7 under § 102(b)

The Examiner rejected claims 6-7 under § 102(b) as being as being anticipated by Raspopovic. Applicants have amended claim 6.

Claim 7 depends directly on claim 6. Claim 6 recites a method of defining global routes for nets in an arbitrary region of a circuit layout. Each net has a set of pins. The method includes using a first set of lines to measure the length of the global routes, using a second set of lines to measure congestion of the global routes, using a third set of lines to partition an arbitrary region into a first set of sub-regions, and for each net, identifying a global route that connects a group of first-set sub-regions that contain the net's set of pins. Each of at least a plurality of global routes is not collinear with segments of said first, second, and third sets of lines.

Accordingly, claim 6 recites a global routing method that defines global routes that are not co-linear with the lines used to measure the lengths of the routes. Raspopovic does not disclose, teach or even suggest such a global routing method. Raspopovic does not explicitly state that the lengths of the

routes are calculated using a set of lines. Raspopovic states that the length of routes is determined by the real coordinates of their respective pins (see Raspopovic Figs. 9-10 and col. 16, lines 55-56). Furthermore, Raspopovic states "The actual routing graph consists of points 84 and the lines connecting them 85." (See Raspopovic, Figure 19, and Col 23, lines 46-48). Thus the lines Raspopovic uses, though not explicitly for measurement, are collinear with the global route lines. This is in contrast to claim 6, in which the global route is not collinear with the set of lines for measuring the length of the route. Applicants are amending claim 6 for clarification, and not for reasons of patentability. Applicants do not surrender any equivalents of amended limitations.

In view of the foregoing remarks, Applicants respectfully submit that Raspopovic does not anticipate or otherwise render invalid the method of claim 6. Given that claim 7 is dependent on claim 6, Applicants respectfully submits that the cited reference does not render unpatentable claims 6-7. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejections of claims 6-7.

II. Rejection of Claims 8-14 under § 102(b), § 103(a)

The Examiner rejected claims 8-13 under § 102(b) as being as being anticipated by Raspopovic. The Examiner also rejected claim 14 under § 103(a) as being unpatentable over Raspopovic in view of Jones. Applicants respectfully traverse these rejections as explained below, but has amended claim 8 in the interest of expeditious prosecution.

Claims 9-14 depend directly or indirectly on claim 8. Claim 8 recites a method of defining global routes for nets in an arbitrary region of a circuit layout. Each net has a set of pins. The method includes using a set of intersecting lines to measure the length of the global routes. The set of lines

defines a set of sub-regions within the arbitrary region of a circuit layout. The method includes using a second set of intersecting lines to measure the congestion of the global routes. The method includes, for each net, identifying a global route that connects a group of first-set sub-regions that contain the net's set of pins. Each global route has a set of route segments. Each of at least a plurality of the global routes intersects with lines of the first and second sets of lines and does not have any segment that is collinear with the first and second sets of lines, and each route segment connects two sub-regions in the first set of sub-regions.

Accordingly, claim 8 recites a global routing method that defines global routes that have segments that are not co-linear with segments of the lines used to measure the lengths of the routes. Raspopovic does not disclose, teach or even suggest such a global routing method. Raspopovic does not explicitly state that the lengths of the routes are calculated using a set of lines. Raspopovic states that the length of routes is determined by the real coordinates of their respective pins (see Raspopovic Figs. 9-10 and col. 16, lines 55-56). Furthermore, Raspopovic states "The actual routing graph consists of points 84 and the lines connecting them 85." (See Raspopovic, Figure 19, and Col 23, lines 46-48). Thus the lines Raspopovic uses, though not explicitly for measurement, are collinear with the global route lines. This is in contrast to claim 8, in which the segments of the global route are not collinear with segments of the lines for measuring the length of the route. Applicants are amending claim 8 for clarification, and not for reasons of patentability. Applicants do not surrender any equivalents of amended limitations.

In view of the foregoing remarks, Applicants respectfully submit that Raspopovic does not anticipate or otherwise render invalid the method of claim 8. Given that claims 9-14 are dependent directly or indirectly on claim 8, Applicants respectfully submit that the cited reference does not render

unpatentable claims 8-14. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102(b) and 103(b) rejections of claims 8-14.

III.   Rejection of Claim 21 under § 102(b)

The Examiner rejected claim 21 under § 102(b) as being as being anticipated by Raspopovic. Applicants respectfully traverse these rejections as explained below, but has amended claim 21 in the interest of expeditious prosecution.

Claim 21 recites a computer program embedded in a computer readable medium. The computer program defines global routes for nets in an arbitrary region of a circuit layout. The computer program includes instructions for using a first set of lines to measure length of the global routes, using a second set of lines to measure congestion of the global routes, using a third set of lines to partition the arbitrary region into a first set of sub-regions. The computer program includes instructions for identifying for each net, a global route that connects a group of first-set sub-regions that contain the net's set of pins. Each of at least a plurality of global routes is not collinear with segments of the first, second, and third sets of lines.

Accordingly, claim 21 recites a global routing method that defines global routes that are not co-linear with the lines used to measure the lengths of the routes. Raspopovic does not disclose, teach or even suggest such a global routing method. Raspopovic does not explicitly state that the lengths of the routes are calculated using a set of lines. Raspopovic states that the length of routes is determined by the real coordinates of their respective pins (see Raspopovic Figs. 9-10 and col. 16, lines 55-56). Furthermore, Raspopovic states "The actual routing graph consists of points 84 and the lines connecting them 85." (See Raspopovic, Figure 19, and Col 23, lines 46-48). Thus the lines Raspopovic uses,

though not explicitly for measurement, are collinear with the global route lines. This is in contrast to claim 21, in which the global route is not collinear with the set of lines for measuring the length of the route. Applicants are amending claim 21 for clarification, and not for reasons of patentability. Applicants do not surrender any equivalents of amended limitations.

In view of the foregoing remarks, Applicants respectfully submit that Raspopovic does not anticipate or otherwise render invalid the method of claim 21. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejections of claims 21.

IV.   Rejection of Claim 22 under § 102(b)

The Examiner rejected claim 22 under § 102(b) as being as being anticipated by Raspopovic. Applicants respectfully traverse these rejections as explained below, but has amended claim 22 in the interest of expeditious prosecution.

Claim 22 recites a computer program embedded in a computer readable medium. the computer program is for defining global routes for nets in an arbitrary region of a circuit layout. The computer program has instructions for using a first set of intersecting lines to measure length of the global routes. The first set of lines defines a first set of sub-regions within the arbitrary region of a circuit layout. The computer program has instructions for using a second set of intersecting lines to measure congestion of the global routes. The program also has instructions for identifying for each net, a global route that connects a group of first-set sub-regions that contain the net's set of pins. Each global route has a set of global route segments. Each of at least a plurality of global routes intersects with lines of the first and

second sets of lines and does not have any segment that is collinear with the first and second sets of lines. Each global route segment connects two sub-regions in the first set of sub-regions.

Raspopovic does not disclose, teach or even suggest such a global routing method. Raspopovic does not explicitly state that the lengths of the routes are calculated using a set of lines. Raspopovic states that the length of routes is determined by the real coordinates of their respective pins (see Raspopovic Figs. 9-10 and col. 16, lines 55-56). Furthermore, Raspopovic states "The actual routing graph consists of points 84 and the lines connecting them 85." (See Raspopovic, Figure 19, and Col 23, lines 46-48). Thus the lines Raspopovic uses, though not explicitly for measurement, are collinear with the global route lines. This is in contrast to claim 22, in which the segments of the global route are not collinear with segments of the lines for measuring the length of the route. Applicants are amending claim 22 for clarification, and not for reasons of patentability. Applicants do not surrender any equivalents of amended limitations.

In view of the foregoing remarks, Applicants respectfully submit that Raspopovic does not anticipate or otherwise render invalid the method of claim 22. Accordingly, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejections of claim 22.

V.   Objection to Claim 15 as depending from a rejected base claim

Applicants thank the Examiner for the allowance. However, Applicants believe that the herein amended base claim for claim 15 (claim 8) is not anticipated or otherwise invalid. Thus Applicants respectfully request reconsideration of the objection to claim 15.

VI.   Amendment of claims 9 and 13

Applicants have amended claims 9 and 13 to clarify that the routes mentioned are global routes.

CONCLUSION

In view of the foregoing, it is submitted that all pending claims, namely claims 6-15 and 21-22 are in condition for allowance. Reconsideration of the rejections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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